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10/608,327

06/27/2003

Raghuram Narayan

20002/14260

7986

7590

09/29/2005

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EXAMINER

NGUYEN, TUAN N

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/608,327

Applicant(s)

NARAYAN, RAGHURAM

Examiner

Tuan N. Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) 8,9 and 17-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-15 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04/05/2004
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or non-obviousness.
2. Claims 1-7, 10, 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sochava et al. (US 6665321).

With respect to claims 1,5, 11 Sochava et al. '321 shows and discloses and external cavity optical transmitter with temperature control substrate (Fig 1318, TEC), having a gain chip (Fig 1a, 13-15: 102), a wavelength selector or grating with reflector forming an optical resonant structure (Fig 15: 110, 114), a temperature controller maintain the gain chip and an optical modulator within an optimal temperature range (Fig 13-14: 102, 530, temperature controller)(Col 11: 25-67; Col 13: 1-67)(Col 12:1-10). Since claim 11 recites the same or identical elements/limitations it is inherent to use patents '321 to recite the method of operating an

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external cavity optical transmitter including gain chip, optical modulator, and temperature control substrate, product by process.

With respect to claims 2-3,6-7, 10 the claims further require the temperature controller varies the temperature of the modulator and gain chip such that the optimal operating temperature range of optical modulator at which an operating current of the gain chip is minimized (Col 11: 25-67; Col 13: 1-67)(Col 12:1-10) (Fig 13: I current). Sochava et al. '321 did not discretely disclose the operating current is minimized, however it has been held that where the general conditions of a claim are disclosed in the prior art, disclosing the optimum or workable ranges involves only routine skill in the art, in this case the temperature or amount of current need to operate the gain chip to increase output or reduce heat produce from the gain chip. In re Aller, 105 USPQ 233.

With respect to claim 4, Sochava et al. '321 discloses the etalon adjacent to the reflector (Col 3: 28-35).

With respect to claims 12-15, the claims further require the differences between temperatures is about two degrees centigrade, operating current or a derivative of the operating current as a function of temperature to determine optimal. Sochava et al. '321 discloses (Col 11: 25-67; Col 13: 1-67)(Col 12:1-10) (Fig 13: 530, Temperature control, I current) the optimal control of the external optical cavity by temperature feedback. It has been held that where the general conditions of a claim are disclosed in the prior art, disclosing the optimum or workable ranges involves only routine skill in the art, in this case the temperature range difference such that the cavity can operate optimally. In re Aller, 105 USPQ 233.

***Allowable Subject Matter***

Claim 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references of the record fail to teach or suggest the method:

**Claim 16:**

Measuring the operating current and comparing it to the minimum operating current, and if the difference between the operating current and the minimum operating current exceeds a predetermined threshold, (a) varying the temperature of the substrate, gain chip, and optical modulator from the first to the second temperature, (b) measuring the operating current to gain chip as substrate, gain chip, and optical modulator temperature varies from the first and second temperature, (c) determining a second optimum temperature between first and second temperature corresponding to second minimum operating current, and (d) maintain the substrate, gain chip, and modulator temperature at the second optimum temperature.

***Communication Information***

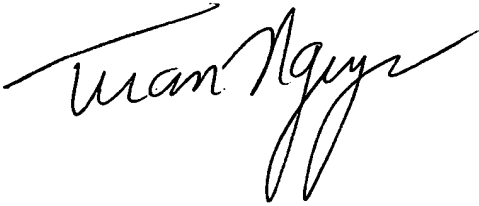

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read "Tuan Nguyen", with a stylized, flowing script.A handwritten signature in black ink, appearing to read "Minsun Oh Harvey", with a stylized, flowing script.  
**MINSUN OH HARVEY  
PRIMARY EXAMINER**